412 Rec'd PCT/PTO 13 JUL 1999

FORM PTO-1390 (REV 11-98)	U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER 2350-73
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		U S APPLICATION NO (If known, see 37 C F R 1.5) 09/341241 Unknown
INTERNATIONAL APPLICATION NO. **PCT/FR97/02472**	INTERNATIONAL FILING DATE **31 December 1997**	PRIORITY DATE CLAIMED **14 January 1997**

TITLE OF INVENTION

COSMETIC OR DERMATOLOGICAL COMPOSITION IN THE FORM OF A GEL, CONTAINING IN A MIXTURE AN ASSOCIATIVE COPOLYMER, A SURFACTANT AND A CONDITIONING AGENT

APPLICANT(S) FOR DO/EO/US

DUPUIS et al

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.

2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.

3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).

4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. A copy of the International Application as filed (35 U.S.C. 371(c)(2)).
   - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
   - b. ☒ has been transmitted by the International Bureau.
   - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).

6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).

7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
   - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   - b. ☐ have been transmitted by the International Bureau.
   - c. ☐ have not been made; however, the time limit for making such amendments has **NOT** expired.
   - d. ☐ have not been made and will not be made.

8. ☐ A translation of the amendments to the claims under PCT Article 19 (U.S.C. 371(c)(3)).

9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).

10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. To 16. Below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

13. ☒ A FIRST preliminary amendment.
    ☐ A SECOND or SUBSEQUENT preliminary amendment.

14. ☐ A substitute specification.

15. ☐ A change of power of attorney and/or address letter.

16. ☒ Other items or information. PTO-1449 and International Search Report ; Return of an initialed copy of the attached PTO 1449 Form, pursuant to MPEP § 609 is requested.

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U.S. APPLICATION NO. (If known, see 37 C F R. 1.5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
09/341241 Unknown	PCT/FR97/02472	2350-73

17. ☒ The following fees are submitted:

	CALCULATIONS PTO USE ONLY		
BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5):			
-- Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO.....$970.00			
-- International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO $840.00			
-- International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2) paid to USPTO.....$760.00			
-- International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) $670.00			
-- International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) $96.00			
ENTER APPROPRIATE BASIC FEE AMOUNT =	$	840.00	
Surcharge of $130.00 for furnishing the oath or declaration later than ☐ 20 ☒ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	130.00	

CLAIMS	NUMBER FILED		NUMBER EXTRA	RATE				
Total Claims	14	-20 =	0	X	$18.00	$	0.00	
Independent Claims	1	-3 =	0	X	$78.00		0.00	
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)				+$260.00		$	0.00	
				TOTAL OF ABOVE CALCULATIONS =		$	**970.00**	
Reduction by ½ for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).							0.00	
				SUBTOTAL =		$	**970.00**	
Processing fee of $130.00, for furnishing the English Translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +							0.00	
				TOTAL NATIONAL FEE =		$	**970.00**	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +						$	0.00	
Fee for Petition to Revive Unintentionally Abandoned Application ($1,210 – Small Entity Fee = $605)						$	0.00	
				TOTAL FEES ENCLOSED =		$	**970.00**	
						Amount to be: refunded	$	
						charged	$	

a. ☒ A check in the amount of $970.00 to cover the above fees is enclosed.
b. ☐ Please charge my Deposit Account No. 14-1140 in the amount of $_____ to cover the above fees. A duplicate copy of this form is enclosed.
c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-1140. A duplicate copy of this form is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

NIXON & VANDERHYE P.C.
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SIGNATURE

B.J. Sadoff
NAME

36,663 **July 13, 1999**
REGISTRATION NUMBER Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

DUPUIS et al Atty. Ref.: **2350-73**

Serial No. **Unknown** Group:

Filed: **July 13, 1999** Examiner:

For: **COSMETIC OR DERMATOLOGICAL COMPOSITION IN THE FORM OF A GEL, CONTAINING IN A MIXTURE AN ASSOCIATIVE COPOLYMER, A SURFACTANT AND A CONDITIONING AGENT**

* * * * * * * * * * * *

July 13, 1999

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Prior to calculation of the filing fee and in order to place the above identified application in better condition for examination, please amend the claims as follows:

IN THE CLAIMS

Claim 3, lines 1 and 2, delete "either one of the preceding claims" and insert -- Claim 1 --.

Claims 4, 5, and 6, lines 1 and 2 of each, delete "any one of the preceding claims" and insert -- Claim 1 --.

Claims 7, 8, 10, and 12, line 1 of each, delete "any one of Claims 1 to 5" and insert -- Claim 1 --.

Claim 14, lines 1 and 2, delete "any one of the preceding claims" and insert -- Claim 1 --.

REMARKS

The above amendments are made to place the claims in a more traditional format.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

B.J. Sadoff
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Cosmetic or dermatological composition in the form of a gel comprising, as a mixture, an associative copolymer, a surfactant and an insoluble conditioning agent

The subject-matter of the present invention is a cosmetic or dermatological composition for topical application which is provided in the form of an aqueous gel comprising at least one associative copolymer, at least one surface-active agent of non-ionic type and at least one insoluble conditioning agent chosen from silicones, hydrocarbons, fatty alcohols and fatty esters.

The expression "associative copolymer" is understood to mean, according to the invention, an amphiphilic copolymer simultaneously comprising hydrophilic units and hydrophobic units.

It is already known to prepare gels of high viscosity from associative copolymers with a low proportion of a surface-active agent.

However, it has been found that these gels, although they constitute good vehicles for various cosmetic or dermatological applications, nevertheless exhibit a poor texture, rendering the gels difficult to pick up by the users.

After various studies on these gels, it has been found, surprisingly and unexpectedly, that it is possible to improve the texture thereof and thus to render them more pleasant on and easier to apply to the skin, and more particularly the hair, by combining them with a certain percentage of an insoluble conditioning agent chosen from silicones, hydrocarbons, fatty alcohols and fatty esters.

This is because it has been found that the improvement in the quality of the gels is markedly greater when a conditioning agent as defined above is used, in comparison, for example, with a natural oil, such as a vegetable oil.

Furthermore, this improvement proved to result from the specific choice of the surface-active agent

used. This is because it has been found that use of other surfactants does not make it possible to lead to satisfactory results with regard to the properties of the gels obtained.

The subject-matter of the present invention is therefore a cosmetic or dermatological composition for topical application in the form of an aqueous gel comprising:

(a) at least one associative copolymer chosen from non-crosslinked copolymers of type acrylic with a hydrophobic chain, in a proportion of 0.8 to 20% by weight with respect to the total weight of the composition,

(b) at least one surface-active agent of the nonionic type, in a ratio of 1/20 to 1/5 with respect to the associative copolymer but present in a proportion of less than 1% by weight with respect to the total weight of the composition, and

(c) at least one insoluble conditioning agent chosen from a silicone, a hydrocarbon, a fatty alcohol or a fatty ester, the said conditioning agent being present in a proportion of 0.01 to 20% by weight with respect to the total weight of the composition.

The gels according to the invention exhibit viscoelastic behaviour. They are preferably characterized by a loss angle $\delta < 35$ and more particularly < 30 in the 10^{-2} to 10 Hz frequency range and by a value of the complex modulus $G^* < 200$ N/m^2 in the 10^{-2} to 10 Hz frequency range, preferably by a value of the complex modulus $G^* > 100$ N/m^2 at 10 Hz. The measurements are carried out at 25°C using a controlled-stress rheometer (Carrimed CSHR 100).

The proportion of non-crosslinked copolymer of the type acrylic with a hydrophobic chain is preferably between 1 and 10% by weight with respect to the total weight of the composition.

The expression "hydrophobic chain" should be understood as meaning, according to the invention, a

linear or branched alkyl or alkenyl chain having from 8 to 32 carbon atoms.

Mention may in particular be made, among non-crosslinked copolymers of the type acrylic with a hydrophobic chain, of those chosen from the group composed of:

- (meth)acrylic acid/ethyl acrylate/C_8-C_{22} alkyl acrylate copolymers, such as the product "Acusol 823®" sold by the Company Röhm & Haas and the product "Imperon R®" by the company Hoechst;

- acrylic acid/lauryl (meth)acrylate copolymers, such as the products "Coatex SX®" sold by the Company Coatex;

- (meth)acrylic acid/C_1-C_{22} alkyl acrylate/polyethoxylated C_1-C_{22} alkyl allyl ether copolymers, in which copolymers at least one of the monomers comprises a C_8-C_{22} alkyl chain, such as the products "Rheovis-CR®", "Rheovis-CR_2®", "RheovisCR_3®" and "Rheovis-CRX®" sold by the Company Allied Colloids;

- methacrylic acid/ethyl acrylate/polyoxyethylenated lauryl acrylate terpolymers, such as the product "Rheo 2000®" sold by the Company Coatex;

- (meth)acrylic acid/ethyl acrylate/polyoxyethylenated stearyl methacrylate copolymers, such as the products "Acrysol 22®", "Acrysol 25®" and DW-1206A®" sold by the company Röhm & Haas;

- (meth)acrylic acid/ethyl acrylate/polyoxyethylenated nonylphenol acrylate copolymers, such as the product "Rheo 3000®" sold by the Company Coatex;

- acrylic acid/polyoxyethylenated cetyl or stearyl monoitaconate copolymers or acrylic acid/polyoxyethylenated cetyl monoitaconate copolymers, such as the products "8069-72A®" and "8069-72B®" sold by the Company National Starch;

- (meth)acrylic acid/butyl acrylate/hydrophobic monomer comprising a fatty chain copolymers, such as the product "8069-146A®" sold by the Company National Starch;

- acrylic acid/C_8-C_{20} (preferably C_{19}) alkyl acrylate/polyethylene glycol acrylate (preferably from 20 to 30 mol of ethylene oxide) terpolymers, such as the product "Dapral GE 202®" sold by the company Akzo;

- (meth)acrylic acid/C_1-C_{22} alkyl acrylate/amphiphilic monomer comprising a C_8-C_{22} hydrocarbon-comprising chain (for example alkyl or alkenyl) comprising urethane groups copolymers, such as the product "Additol VXW 1312®" sold by the company Hoechst, and

- acrylic polymers modified by hydrophobic groups with a fatty chain (C_8-C_{22} hydrocarbon-comprising chain, such as alkyl or alkenyl), such as the product "CS-0406®" sold by the company Röhm & Haas.

Of course, the copolymers described above can be used alone or in a mixture.

The surface-active agent according to the invention of the nonionic type of the compositions according to the invention is preferably chosen from alcohols, α-diols, alkylphenols or fatty acids, these being polyethoxylated, polypropoxylated or polyglycerolated and having a fatty chain comprising from 8 to 28 carbon atoms, it being possible for the number of ethylene or propylene oxide groups to range from 2 to 50 and that of glycerol in particular from 2 to 30, copolymers of ethylene and propylene oxide, condensates of ethylene and propylene oxide with fatty alcohols, polyethoxylated fatty amines or amides preferably having from 2 to 30 mol of ethylene oxide, polyglycerolated fatty amides comprising on average 1 to 5 glycerol groups, polyglycerolated diglycolamides, optionally oxyethylenated fatty acid esters of sorbitan, fatty acid esters of sucrose, polyoxyalkylenated fatty acid esters, optionally oxyalkylenated alkyl polyglycosides, esters of alkyl glucosides, N-alkylglucamine and N-acylmethylglucamine derivatives, aldobionamides and amine oxides.

Mention may in particular be made, among surface-active agents of the nonionic type which are

particularly preferred, of esters of sorbitol and of C_8-C_{22} fatty acids which are optionally oxyethylenated or of (C_8-C_{22})alkyl polyglucosides, such as the product sold under the name of "APG 300 Glycoside®" by the company Henkel.

The surface-active agent of nonionic type can optionally, according to the invention, be used in combination with a surface-active agent of the anionic or amphoteric type.

Mention may particularly be made, among surface-active agents of the anionic type, of the salts, in particular the alkali metal and especially sodium salts, the ammonium salts, the amine salts, the aminoalcohol salts or the magnesium salts of the following compounds: alkyl sulphates, alkyl ether sulphates, alkylamido ether sulphates, monoglyceride sulphates, alkyl glyceryl sulphonates, alkyl sulphonates, alkyl phosphates, alkylamide sulphonates, alkylaryl sulphonates, α-olefin sulphonates, paraffin sulphonates, alkyl sulphosuccinates, alkyl ether sulphosuccinates, alkylamide sulphosuccinates, alkylsulphosuccinamates, alkyl sulphoacetates, alkyl ether phosphates, acylisethionates, N-acyltaurates or N-acylamino acids, such as N-acylsarcosinates and N-acylglutamates. Mention may also be made, as anionic surface-active agents which can be used in the compositions according to the invention, of the salts of fatty acids, such as the salts of undecenylic, oleic, ricinoleic, palmitic and stearic acids, coconut oil or hydrogenated coconut oil acids and acylhydroxy acids, such as acyllactylates. Use may also be made of weakly anionic surface-active agents, such as alkyl D-galactoside uronic acids and their salts, as well as polyoxyalkylenated alkylamido ether carboxylic alkyl ether acids or their salts, the alkyl or acyl radical of these various compounds preferably comprising from 8 to 22 carbon atoms, and anionic derivatives of (C_8-C_{22})alkyl polyglycosides (sulphate, sulphosuccinate,

phosphate, isethionate, ether carboxylate or carbonate).

Mention may be made, among surface-active agents of the amphoteric type, of derivatives of secondary or tertiary aliphatic amines in which the aliphatic radical is a linear or branched chain comprising 8 to 22 carbon atoms and comprising at least one water-solubilizing anionic group, such as, for example, a carboxylate, sulphonate, sulphate, phosphate or phosphonate group. Mention may also be made, among surface-active agents of amphoteric or zwitterionic type, of sulphobetaines, alkyl amidoalkyl betaines, alkyl amidoalkyl sulphobetaines or imidazolium derivatives, such as those of amphocarboxyglycinate or amphocarboxypropionate.

The expression "insoluble conditioning agent" is understood as meaning, according to the invention, a silicone, a hydrocarbon, a fatty alcohol or a fatty ester which is insoluble or essentially insoluble in water (solubility of less than 0.5% by weight).

When the conditioning agent of the composition according to the invention is a silicone, the latter is generally present in the composition according to the invention in a proportion preferably of between 0.05 and 5% by weight with respect to the total weight of the composition.

The silicones or organopolysiloxanes used in the composition according to the present invention are organopolysiloxane oils or organosiloxane gum or resin organic solutions.

Mention may be made, among the organosiloxanes used in accordance with the present invention, without implied limitation, of:

I. Volatile silicones

These have a boiling point of between 60°C and 260°C. Mention is made, among silicones of this type, of:

(i) cyclic silicones comprising 3 to 7 silicon atoms and preferably 4 to 5 silicon atoms. It is, for example, the octamethylcyclotetrasiloxane sold under the name of "Volatile Silicone 7207®" by the company Union Carbide or "Silbione 70045 V2®" by the company Rhône-Poulenc or the decamethylcyclopentasiloxane sold under the name of "Volatile Silicone 7158®" by the company Union Carbide or "Silbione 70045 V5®" by the company Rhône-Poulenc, as well as their mixtures.

Mention is also made of cyclopolymers of the dimethylsiloxane/methylalkylsiloxane type, such as "Silicone Volatile FZ 3109®", sold by the company Union Carbide, which is a dimethylsiloxane/methyloctylsiloxane cyclocopolymer;

(ii) volatile linear silicones having 2 to 9 silicon atoms and possessing a viscosity of less than or equal to 5×10^{-6} m^2/s at 25°C. It is, for example, the hexamethyldisiloxane sold under the name "Silbione 70041 V0.65®" by the company Rhône-Poulenc. This type of product is described in the article by Todd & Byers, "Volatile silicone fluids for cosmetics", Cosmetics and Toiletries, Vol. 91, Jan 76, pages 27-32.

II. Non-volatile silicones

They are composed mainly of polyalkylsiloxanes, polyarylsiloxanes, polyalkylarylsiloxanes, silicone gums and resins and organomodified polysiloxanes, as well as their mixtures.

Mention may be made, among polyalkylsiloxanes, mainly of linear polydimethylsiloxanes with a viscosity of greater than 5×10^{-6} m^2/s and preferably of less than 2.6 m^2/s, i.e.:

- with terminal trimethylsilyl groups, such as, for example, without implied limitation, the "Silbione®" oils of the 70047 series which are sold by the company Rhône-Poulenc, the "47 V 500,000®" oil from Rhône-Poulenc or certain "Viscasil®" products from the company General Electric,

- with terminal trihydroxysilyl groups, such as the oils of the "48 V®" series from the company Rhône-Poulenc.

Mention may also be made, in this class of polyalkylsiloxanes, of the polyalkylsiloxanes sold by the company Goldschmidt under the names "Abilwax 9800®" and "Abilwax 9801®", which are poly(C_1-C_{20})alkylsiloxanes.

Mention may be made, among polyalkylarylsiloxanes, of linear and/or branched polydimethyldiphenylsiloxanes or polydimethylphenyl-siloxanes with a viscosity of 10^{-5} to 5×10^{-2} m^2/s at 25°C, such as, for example:

- the "Rhodorsil® 763" oil from Rhône-Poulenc,
- the "Silbione®" oils of the 70641 series from Rhône-Poulenc, such as the "Silbione 70641 V30®" and "Silbione 70641 V200®" oils from Rhône-Poulenc,
- the product "DC 556 Cosmetic Grade Fluid®" from Dow Corning,
- the silicones of the PK series from Bayer, such as "PK20®",
- the silicones of the PN and PH series from Bayer, such as "PN 1000®" and "PH 1000®",
- certain oils of the SF series from General Electric, such as "SF 1250®", "SF 1265®", "SF 1154®" and "SF 1023®".

The silicone gums, in accordance with the present invention, are polydiorganosiloxanes with a high number-average molecular mass of between 200,000 and 1,000,000, used alone or as a mixture in a solvent chosen from volatile silicones, polydimethylsiloxane (PDMS) oils, polyphenylmethyl-siloxane (PPMS) oils, isoparaffins, methylene chloride, pentane, dodecane, tridecane, tetradecane or their mixtures.

Mention is made, for example, of the following compounds:

- poly[(dimethylsiloxane)/(methylvinylsilxoane)],
- poly[(dimethylsiloxane)/(diphenylsiloxane)],

- poly[(dimethylsiloxane)/(phenylmethyl-siloxane)],
- poly[(dimethylsiloxane)/(diphenylsiloxane)/methylvinylsiloxane)].

Mention may be made, for example, without implied limitation, of the following mixtures:

1) the mixtures formed from a polydimethylsiloxane hydroxlyated at the chain end (Dimethiconol, according to the CTFA nomenclature) and from a cyclic polydimethylsiloxane (Cyclomethicone, according to the CTFA nomenclature), such as the product "Q2 1401®" sold by the company Dow Corning;

2) the mixtures formed from a polydimethylsiloxane gum with a cyclic silicone, such as the product "SF 1214 Silicone Fluid®" from General Electric, which is an "SE 30®" gum with an MW of 500,000 ($\overline{M}n$) dissolved in "SF 1202 Silicone Fluid®" (decamethylcyclopentasiloxane);

3) the mixtures of two PDMS with different viscosities, in particular of a PDMS gum and of a PDMS oil, such as the products "SF 1236®" and "CF 1241®" from the company General Electric. The product "SF 1236®" is the mixture of an "SE 30®" gum defined above, with a viscosity of 20 m^2/s, and of an "SF 96®" oil, with a viscosity of 5×10^{-6} m^2/s (15% of "SE 30®" gum and 85% of "SF 96®" oil).

The product "CF 1241®" is the mixture of an "SE 30®" gum (33%) and of a PDMS (67%) with a viscosity of 10^{-3} m^2/s.

The organopolysiloxane resins which can be used in accordance with the invention are crosslinked siloxane systems including the units: $R_2SiO_{2/2}$, $RSiO_{3/2}$ and $SiO_{4/2}$, in which R represents a hydrocarbon-comprising group having 1 to 6 carbon atoms or a phenyl group. The products which are particularly preferred among these are those in which R denotes a lower alkyl radical or a phenyl radical.

Mention may be made, among these resins, of the product sold under the name "Dow Corning 593®" or those

sold under the names "Silicone Fluid SS 4230" and "Silicone Fluid SS 4267" by the company General Electric, which are dimethyl/trimethylpolysiloxanes.

The organomodified silicones, in accordance with the present invention, are silicones as defined above comprising, in their general structure, one or more organofunctional groups directly attached to the siloxane chain or attached via a hydrocarbon-comprising radical.

Mention is made, for example, of the silicones comprising:

a) perfluorinated groups, such as trifluoroalkyl groups, such as, for example, those sold by the company General Electric under the names "FF.150 Fluorosilicone Fluid®" or by the company Shin Etsu under the names "X-22-819®", "X-22-82®", "X-22-821®" and "X-22-822®";

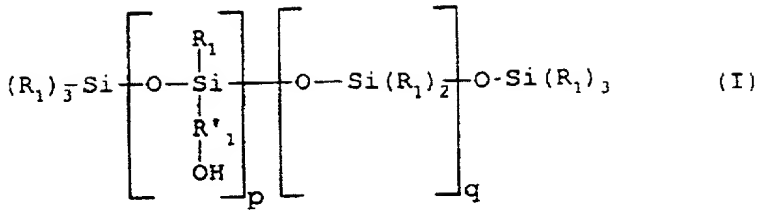
b) hydroxyacylamino groups, such as, for example, those disclosed in Patent Application EP-A-0,342,834 and in particular the silicone sold by the company Dow Corning under the name "Q2-8413®";

c) thiol groups, as in the "X2-8360®" silicones from the company Dow Corning or "GP 72A®" and "GP 71®" from Genesee;

d) substituted or unsubstituted amino groups, as in "GP 4 Silicone Fluid®" from Genesee, "GP 7100®" from Genesee, "Q2 8220®" from Dow Corning, "AFL 40®" from Union Carbide or the silicone named "Amodimethicone" in the CTFA dictionary;

e) carboxylate groups, such as the products disclosed in Patent EP 186,507 of Chisso Corporation;

f) hydroxylated groups, such as the polyorganosiloxanes with a hydroxyalkyl functional group, disclosed in Patent Application FR-85 16334, corresponding to the following formula:



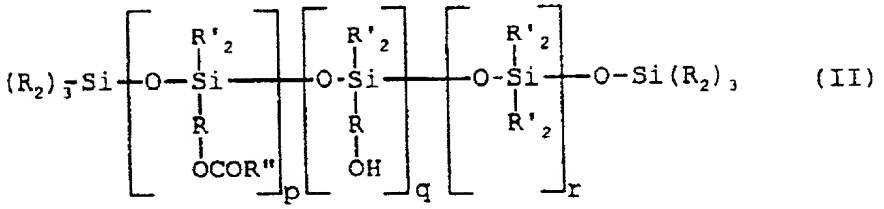
(I)

in which:

- the R_1 radicals, which are identical or different, are chosen from the methyl and phenyl radicals, at least 60 mol% of the R_1 radicals being methyl;
- the R'_1 radical is a divalent C_2-C_{18} hydrocarbon-comprising alkylene linkage;
- p is between 1 and 30 inclusive;
- q is between 1 and 150 inclusive;

g) alkoxylated groups, as in "Silicone copolymer F 755®" from SWS Silicones and the products "Abilwax 2428®", "Abilwax 2434®" and "Abilwax 2440®" from the company Goldschmidt;

h) acyloxyalkyl groups, such as, for example, the polyorganopolysiloxanes disclosed in Patent Application FR-88 17433, corresponding to the following formula:



(II)

in which:

- R_2 denotes methyl, phenyl, OCOR'' or hydroxyl, it being possible for only one of the R_2 groups per silicon atom to be OH;
- R'_2 denotes methyl or phenyl, at least 60 mol% of the combined R_2 and R'_2 radicals being methyl;
- R'' denotes C_8-C_{20} alkyl or alkenyl;
- R denotes a linear or branched divalent C_2-C_{18} hydrocarbon-comprising alkylene;
- r is between 1 and 120 inclusive;

- p is between 1 and 30 inclusive;

- q has the value 0 or is less than 0.5 p, p + q being between 1 and 30 inclusive;

- it being possible for the polyorganosiloxanes of formula (II) to comprise groups in

proportions not exceeding 15% of the sum p + q + r;

i) quaternary ammonium groups, as in the products "X2 81 08®" and "X2 81 09®", or the product "Abil K 3270®" from the company Goldschmidt;

j) amphoteric or betaine groups, such as in the product sold by the company Goldschmidt under the name "Abil B 9950®"

k) bisulphite groups, such as in the products sold by the company Goldschmidt under the names "Abil S 201®" and "Abil S 255®".

The polyorganosiloxanes which are particularly preferred according to the present invention are chosen from:

1) non-volatile silicones of the type linear polyalkylsiloxane comprising terminal trimethylsilyl groups, such as the "Silbione®" oils of the 70047 and 47 series, such as the "47 V 500,000®" oil, which are sold by the company Rhône-Poulenc, or of the polyalkylarylsiloxane type, such as the "Silbione 70641 V 200®" oil from the company Rhône-Poulenc;

2) mixtures of organosiloxanes and of cyclic silicones, such as "Q2 1401®" from the company Dow Corning or "SF 1214 Silicone Fluid®" from the company General Electric;

3) fluorosilicones of type polyalkylsiloxane comprising terminal trimethylsilyl groups and substituted on the chain by trifluoropropyl groups, such as the fluorosilicone sold by the company Shin Etsu under the name "X-22-821®".

When the conditioning agent of the composition according to the invention is a hydrocarbon, the latter can be a linear or branched C_8-C_{300} hydrocarbon. Mention may in particular be made, among hydrocarbons which are

liquid at room temperature corresponding to this definition, of isododecane, isohexadecane and its isomers (such as 2,2,4,4,6,6-heptamethylnonane), isoicosane, isotetracosane and the isomers of the said compounds. Use is preferably made, according to the invention, of isododecane or one of its isomers.

When the conditioning agent is a fatty alcohol, the latter is of the saturated or unsaturated, linear or branched C_8-C_{22} type and mention may be made, among these, of 2-butyloctanol, lauryl alcohol, oleyl alcohol, isocetyl alcohol and isostearyl alcohol.

When the conditioning agent is a fatty ester, the latter can be either an ester of a C_8-C_{22} fatty acid and of a C_1-C_{22} alcohol or an ester of a C_1-C_7 acid or diacid and of a C_8-C_{22} fatty alcohol. Mention may be made, among these esters, of ethyl, isopropyl, 2-ethylhexyl and 2-octyldecyl palmitate, isopropyl, butyl, cetyl and 2-octyldecyl myristate, butyl and hexyl stearate, hexyl and 2-hexyldecyl laurate, isononyl isononanoate and dioctyl malate.

The hydrocarbons, the fatty alcohols and the fatty esters and their mixtures are, just like the silicones, preferably present in a proportion of between 0.05 and 5% by weight with respect to the total weight of the composition.

Various active substances having a cosmetic or dermopharmaceutical advantage can be introduced into the compositions in aqueous gel form according to the invention.

Mention may be made, among these active substances, by way of example, of:

- agents modulating cutaneous differentiation and/or proliferation and/or pigmentation, such as retinoic acid and its isomers, retinol and its esters, vitamin D and its derivatives, oestrogens, such as oestradiol, kojic acid or hydroquinone;

- antibacterials or antibiotics, antiparasitics, antifungals, antiviral agents, steroidal anti-inflammatory agents or non-steroidal

anti-inflammatory agents, substances such as substance P, CGRP or bradykinin antagonists or NO-synthase inhibitors, anaesthetic agents or antipruritic agents.

Mention may be made, as other active substances, of:

- keratolytic agents, such as α- and β-hydroxycarboxylic or β-ketocarboxylic acids, their salts, amides or esters and more particularly hydroxy acids, such as glycolic acid, lactic acid, salicylic acid, citric acid and fruit acids generally, and 5-(n-octanoyl)salicylic acid;

- agents for combating free radicals, antiseborrhoeic agents, antiacne agents, pyrimidine derivatives, such as 2,4-diamino-6-piperidinopyrimidine 3-oxide or "Minoxidil" or also its numerous derivatives, agents promoting hair regrowth, such as those disclosed in Patent Application EP 0,648,488, calcium-antagonist agents, hormones or antiandrogen agents.

The compositions according to the invention can also comprise various adjuvants used in particular in cosmetics, such as fragrances, preservatives, sunscreen agents, sequestering agents, colorants, acidifying or basifying agents, moisturizers or emollients, reducing agents, oxidizing agents, non-oily agents for conditioning the hair or the skin, as well as other adjuvants, according to the use envisaged.

Several examples of the composition according to the invention will now be given by way of illustration.

EXAMPLES

EXAMPLE 1: *Leave-in care gel*

A leave-in gel is prepared by mixing the following ingredients:

- Acrylic acid/C_1-C_{18} alkyl acrylate/stearyl methacrylate polyoxyethylenated with 20 mol of ethylene oxide terpolymer, sold under the name of "Acrysol ICS-1®" by the company Röhm & Haas ..... 1.0 g
- Lauryl ester of sorbitol oxyethylenated with 20 mol of ethylene oxide (Tween 20) ..... 0.1 g
- 2-Butyloctanol (Isofol 12) ..... 2.0 g
- 2-Amino-2-methyl-1-propanol q.s. pH 7.5
- Water .....q.s. for 100.0 g

The gel obtained exhibits an excellent texture and is particularly easy to apply to the hair.

EXAMPLE 2: *Leave-in care gel*

- Acrylic acid/C_1-C_{18} alkyl acrylate/stearyl methacrylate polyoxyethylenated with 20 mol of ethylene oxide terpolymer, sold under the name of "Acrysol ICS-1®" by the company Röhm & Haas ..... 2.0 g
- Decyl polyglucose, sold under the name of "APG 300 Glycoside®" by the Company Henkel .. 0.2 g
- α,ω-Di-OH-polydimethylsiloxane at a 14% solution in the cyclotetra/cyclopentadimethylsiloxane mixture ("Q2-1401®" from Dow Corning) ..... 20.0 g
- 2-Amino-2-methyl-1-propanol q.s. pH 7.5
- Water ..... q.s. for 100.0 g

EXAMPLE 3: *Leave-in care gel*

- (Meth)acrylic acid/C_8-C_{22} alkyl acrylate/ polyoxyethylenated C_1-C_{22} alkyl allyl ether terpolymer, sold under the name of "Rheovis-CR®" by the Company Allied Colloids ..... 4.0 g
- Decyl polyglucose, sold under the name of "APG 300 Glycoside®" by the Company Henkel . 0.2 g
- Polydimethylsiloxane with a viscosity of 500 cSt, sold under the name of "Mirasil DM 500®" by the Company Rhône-Poulenc ..... 3.0 g
- 2-Amino-2-methyl-1-propanol q.s. pH 7.5
- Water ..... q.s. for 100.0 g

EXAMPLE 4: *Leave-in care gel*

- Methacrylic acid/ethyl acrylate/ polyoxyethylenated nonylphenol acrylate terpolymer, sold under the name of "Rheo 3000®" by the Company Coatex ..... 2.0 g
- Lauryl ester of sorbitol oxyethylenated with 20 mol of ethylene oxide (Tween 20) ..... 0.4 g
- Isohexadecane ..... 2.0 g
- 2-Amino-2-methyl-1-propanol q.s. pH 7.5
- Water ..... q.s. for 100.0 g

CLAIMS

1. Cosmetic or dermatological composition for topical application in the form of an aqueous gel, characterized in that it comprises:

(a) at least one associative copolymer chosen from non-crosslinked copolymers of type acrylic with a hydrophobic chain, in a proportion of 0.8 to 20% by weight with respect to the total weight of the composition,

(b) at least one surface-active agent of the nonionic type, in a ratio of 1/20 to 1/5 with respect to the associative copolymer but present in a proportion of less than 1% by weight with respect to the total weight of the composition, and

(c) at least one insoluble conditioning agent chosen from a silicone, a hydrocarbon, a fatty alcohol or a fatty ester, the said conditioning agent being present in a proportion of 0.01 to 20% by weight with respect to the total weight of the composition.

2. Composition according to Claim 1, characterized in that the proportion of non-crosslinked copolymer of the type acrylic with a hydrophobic chain is between 1 and 10% by weight with respect to the total weight of the composition.

3. Composition according to either one of the preceding claims, characterized in that the said non-crosslinked copolymer of type acrylic with a hydrophobic chain is chosen from the group composed of:

- (meth)acrylic acid/ethyl acrylate/C_8-C_{22} alkyl acrylate copolymers;
- acrylic acid/lauryl (meth)acrylate copolymers;
- (meth)acrylic acid/C_1-C_{22} alkyl acrylate/polyethoxylated C_1-C_{22} alkyl allyl ether copolymers, in which copolymers at least one of the monomers comprises a C_8-C_{22} alkyl chain;
- methacrylic acid/ethyl acrylate/polyoxyethylenated lauryl acrylate terpolymers;

- methacrylic acid/ethyl acrylate/polyoxyethylenated stearyl methacrylate copolymers;

- (meth)acrylic acid/ethyl acrylate/polyoxyethylenated nonylphenol acrylate copolymers;

- acrylic acid/polyoxyethylenated stearyl or cetyl monoitaconate copolymers;

- (meth)acrylic acid/butyl acrylate/hydrophobic monomer comprising a fatty chain copolymers;

- acrylic acid/C_8-C_{20} alkyl acrylate/polyethylene glycol acrylate terpolymers;

- (meth)acrylic acid/C_1-C_{22} alkyl acrylate/amphiphilic monomer comprising a C_8-C_{22} hydrocarbon-comprising chain copolymers; and

- acrylic polymers modified by hydrophobic groups with a fatty chain.

4. Composition according to any one of the preceding claims, characterized in that the said surface-active agent of the nonionic type is chosen from optionally oxyethylenated esters of sorbitol and of C_8-C_{22} fatty acids and from alkyl polyglucosides.

5. Composition according to any one of the preceding claims, characterized in that it additionally comprises at least one anionic and/or amphoteric surface-active agent.

6. Composition according to any one of the preceding claims, characterized in that the silicone is of the volatile type having a boiling point of between 60°C and 260°C.

7. Composition according to any one of Claims 1 to 5, characterized in that the silicone is of the non-volatile type and is chosen from polyalkylsiloxanes, polyarylsiloxanes, polyalkylarylsiloxanes, silicone gums and resins and organomodified polysiloxanes, and their mixtures.

8. Composition according to any one of Claims 1 to 5, characterized in that the hydrocarbon is a linear or branched, cyclic or acyclic C_8-C_{300} hydrocarbon.

9. Composition according to Claim 8, characterized in that the hydrocarbon is chosen from isododecane,

isohexadecane and its isomers, isoicosane, isotetracosane and their isomers.

10. Composition according to any one of Claims 1 to 5, characterized in that the fatty alcohol is a saturated or unsaturated, linear or branched C_8-C_{22} fatty alcohol.

11. Composition according to Claim 10, characterized in that the fatty alcohol is chosen from 2-butyloctanol, lauryl alcohol, oleyl alcohol, isocetyl alcohol and isostearyl alcohol.

12. Composition according to any one of Claims 1 to 5, characterized in that the fatty ester is an ester of a C_8-C_{22} fatty acid and of a C_1-C_{22} alcohol or an ester of a C_1-C_7 acid or diacid and of a C_8-C_{22} fatty alcohol.

13. Composition according to Claim 12, characterized in that the fatty ester is chosen from ethyl, isopropyl, 2-ethylhexyl and 2-octyldecyl palmitate, isopropyl, butyl, cetyl and 2-octyldecyl myristate, butyl and hexyl stearate, hexyl and 2-hexyldecyl laurate, isononyl isononanoate and dioctyl malate.

14. Composition according to any one of the preceding claims, characterized in that it additionally comprises at least one adjuvant chosen from fragrances, preservatives, sunscreen agents, sequestering agents, moisturizers or emollients, reducing agents, oxidizing agents, non-oily agents for conditioning the hair or the skin, colorants and acidifying or basifying agents.

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: COSMETIC OR DERMATOLOGICAL COMPOSITION IN THE FORM OF A GEL COMPRISING, AS A MIXTURE, AN ASSOCIATIVE COPOLYMER, A SURFACTANT AND AN INSOLUBLE CONDITIONING AGENT

the specification of which **(check** applicable **box(s)):**

☐ is attached hereto

X was filed on JULY 13, 1999 as U.S. Application Serial No. 09/341,241 (Atty Dkt. No. 2350-70)

X was filed as PCT International application No. PCT/FR97/02472 on DECEMBER 31, 1997

and (if applicable to U.S. or PCT application) was amended on

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F R 1 56. 1 hereby claim foreign priority benefits under 35 U S.C 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed or, if no priority is claimed, before the filing date of this application:

Priority Foreign Application(s):

Application Number	**Country**	**Day/Month/Year Filed**
97 00277	**France**	**January 14, 1997**

I hereby claim the benefit under 35 U.S C. 120/365 of all prior United States and PCT international applications listed above or below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S C 112, 1 acknowledge the duty to disclose material information as defined in 37 C.F.R 1.56 which occurred between the filing date of the prior applications and the national or PCT international filing date of this application·

Prior U.S./PCT Application(s): **Application Serial No.**	**Day/Month/Year Filed**	**Status: patented pending, abandoned**
PCT/FR97/02472	December 31, 1997	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1 001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon And I hereby appoint **NIXON & VANDERHYE P.C., 1100 North Glebe Rd., 8th Floor, Arlington, VA 22201-4714, telephone number (703) 816-4000 (to whom all communications are to be directed),** and the following attorneys thereof (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent Arthur R Crawford, 25327, Larry S Nixon, 25640, Robert A. Vanderhye, 27076, James T. Hosmer, 30184; Robert W. Faris, 31352; Richard G. Besha, 22770; Mark E. Nusbaum, 32348, Michael J. Keenan, 32106, Bryan H Davidson, 30251; Stanley C. Spooner, 27393; Leonard C Mitchard, 29009; Duane M Byers, 33363; Jeffry H Nelson, 30481, John R Eastova, 33149, H. Warren Burnam, Jr. 29366; Thomas E Byrne, 32205; Mary J Wilson, 32955; J Scott Davidson, 33489, Alan M Kagen, 36178, William J Griffin, 31260; Robert A Molan, 29834; B J Sadoff, 36663, James D Berquist, 34776, Updeep S Gill, 37334; Michael J Shea, 34725, Donald L. Jackson,, 41090.*

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FOR ADDITIONAL INVENTORS, check box ☐ and attach sheet with same information and signature and date for each.